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TITLE: Screening methods for enzymes and enzyme kits

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INVENTOR-INFORMATION:

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CLAIMS:

What is claimed is:

1. A method for identifying clones of a recombinant library which express a protein with a desired characteristic, produced from DNA recovered from a plurality of species of organisms, comprising:

screening in the liquid phase a library of expression clones randomly produced from DNA recovered from the organisms, said screening being effected on expression products of said clones to thereby identify clones which express a protein with a desired characteristic.

- 2. The method of claim 1 wherein the DNA from the library of expression clones produced is gene cluster DNA.
- 3. The method of claim 1 wherein said protein is an enzyme.
- 4. A method of screening clones having DNA recovered from a plurality of species of organisms for a specified protein characteristic, which method comprises:

screening for a specified protein characteristic in a library of clones prepared by

- (i) recovering DNA from a DNA population derived from a plurality of species of organisms; and
- (ii) transforming a host cell with the recovered DNA to produce a library of clones which is screened for the specified protein characteristic.
- 5. The method of claim 4 wherein the recovered DNA is amplified.
- 6. The method of claim 4 wherein the recovered DNA is ligated into a vector.
- 7. The method of claim 6 wherein the vector into which the recovered DNA is ligated comprises at least one DNA sequence capable of regulating production of a detectable enzyme activity from said recovered DNA.

- 8. The method of claim 4 wherein the vector into which the recovered DNA has been ligated is used to transform a host cell.
- 9. The method of claim 4 a wherein the protein is an enzyme.